03M09D29

Passive Probe

PM8924

Instruction Manual

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870801

I&E

Industrial & Electro-acoustic Systems Division

PHILIPS

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1. INTRODUCTION

The PM 8924-series is a 1x attenuator modular probe, designed for oscilloscopes.
Depending on the probe version, two different types are available:
- PM 8924 , with a cable length of 1,5 m.
- PM 8924/20 , with a cable length of 2,5 m.

The probes consist of 2 separate units
- the cable assembly, with BNC male connector output.
- the probe body including probe tip and RC assembly.

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2. CHARACTERISTICS

- Properties expressed in numerical values with tolerances stated, are guaranteed by the manufacturer.
- Numerical values without tolerances are typical and represent the characteristics of an average probe.

2.1. ELECTRICAL

note: These characteristics are valid with a termination of 1 MΩ oscilloscope input, unless otherwise stated.

designation	specification	additional information
Attenuation (d.c.)	1x	
Input impedance		
- parallel capacitance at d.c.	1 MΩ	
- parallel capacitance	47 pF 74 pF	for PM 8924 for PM 8924/20 (excl. oscilloscope input capacitance)
Bandwidth		
- probe only bandwidth at osc. input cap. 25 pF	d.c.....12 MHz(−3 dB) d.c.....15 MHz(−3 dB)	for PM 8924/20 for PM 8924
- Useful system bandwidth at osc. inp. cap. 25 pF	d.c.....2 MHz(−3 dB)	*Note: Up to these freq. the system (probe + osc) bandwidth is ⩾95 % of the "osc. only bandwidth".*

designation	specification	additional information
Pulse response		Aberrations in addition to osc. aberrations.
- Max. overshoot	3 %	
- Max. ringing	1 %	
- Max. tilt	1 %	
Max. non destructive input voltage (d.c. + a.c. peak)	42 V	
Test voltage (d.c.):		
- type test	1,7 kV	During 1 min (output not terminated with 1 MΩ)
- performance check	1,7 kV	During 1 sec

2.2. MECHANICAL

	length	width	height	
— Dimensions				
probe body	57 mm	14 mm	(max)	
cable assy	1500 mm	14,5 mm	(max)	for PM 8924
	2500 mm	14,5 mm	(max)	for PM 8924/20
pouch	275 mm	195 mm		
— Mass	115 g			for PM 8924
	131 g			for PM 8924/20
				Standard probe with accessories in pouch.

2.3. ENVIRONMENTAL

The characteristics are valid only if the instrument is checked in accordance with the official checking procedure. Details on these procedures and failure criteria are supplied on request by the PHILIPS–organisation in your country, or by PHILIPS, INDUSTRIAL AND ELECTRO–ACOUSTIC SYSTEMS DIVISION, EINDHOVEN, THE NETHERLANDS.

– operating temperature	$-10^{o}C....+55^{o}C$
– Storage temperature	$-62^{o}C....+85^{o}C$
– Maximum humidity	95 % relative humidity
– Altitude *operating	To 4500 m.
*non-operating	To 12000 m.
– Vibration (operating)	
* Freq. 5.....15 Hz	7 min each axis, excursion 1,5 mm (p-p) and 7 m/s^2 (0,7 g) acceleration at 15 Hz.
* Freq. 15.....25 Hz	3 min each axis, excursion 1 mm (p-p) and 13 m/s^2 (1,3 g) acceleration at 25 Hz.
* Freq. 25.....55 Hz	5 min each axis, excursion 0,5 mm (p-p) and 30 m/s^2 (3 g) acceleration at 55 Hz.
– Resonance dwell	10 min at each resonance freq.
– Shock (operating)	300 m/s^2 (30 g), half sine-wave shock, duration is 11 ms. (3 shocks per direction for a total of 18 shocks).

2.4. ACCESSORIES

– Accessory kit, contents:
  - Earth cable
  - Spring-loaded test clip
  - Set marking rings
  - Probe tip (2x)
  - Insulating cap
  - S.O. cap
  - Wrap pin adapter

– Instruction manual

3. DESCRIPTION OF ACCESSORIES

Earth cable: To minimize ringing in a signal, an earth cable is provided. This cable must **first** be plugged onto the probe body and then be connected to the nearest earth point to the circuit to be measured.

Spring-loaded test clip: This is a provision for hands-free connection to a test point or component lead.

Marking rings: At delivery a set of 3 different colour marking rings (red, white and blue) are provided. This can be used to help identify the specific probes when using more than one probe on an oscilloscope.

Probe tip: A spare set of 2 probe tips are standard supplied with the probe. When a probe tip is damaged it can be pulled out by means of a pair of pliers. Then a new tip must be firmly pushed in.

Insulating cap: An insulating cap is provided to cover the metal part of the probe during measurements in densely wired circuits.

D.I.L. cap: This is a cap facilitating measurements on dual-on line intergrated circuits. Pitch is 2,54 mm.

S.O. cap: This is a cap facilitating measurements on small outline integrated circuits. Pitch is 1,27 mm.

Wrap pin adapter: The wrap pin adapter is a provision to make hands-free connection to a wire wrapped pin circuit.

4 DISMANTLING

WARNING: The probe shall be disconnected from all voltage sources before any unit separation, replacement or maintenance will be carried out.

4.1. DISMANTLING THE PROBE BODY

The probe body can be removed by sliding the probe body from the cable assembly.

5. PARTS LIST

For ease of handling some spare parts are delivered in larger quantities as a set.

Item	Q.ty	Ordering number	Description
1	1	5322 264 20063	Probe body for PM 8924
	1	5322 264 20064	Probe body for PM 8924/20
2	1	5322 321 21173	Cable assy–1,5 m for PM 8924
	1	5322 321 21226	Cable assy–2,5 m for PM 8924/20
3	1	5322 321 20223	Earth cable
4	1	5322 264 24019	Spring-loaded test clip
5	6	5322 310 30624	Set of probe tips
6	6	5322 310 30623	Set of insulating cap
7	6	5322 414 70101	Set of S.O. cap
8	4	5322 310 30627	Set of WRAP–pin adapter
9	6	5322 310 30626	Set of DIL cap

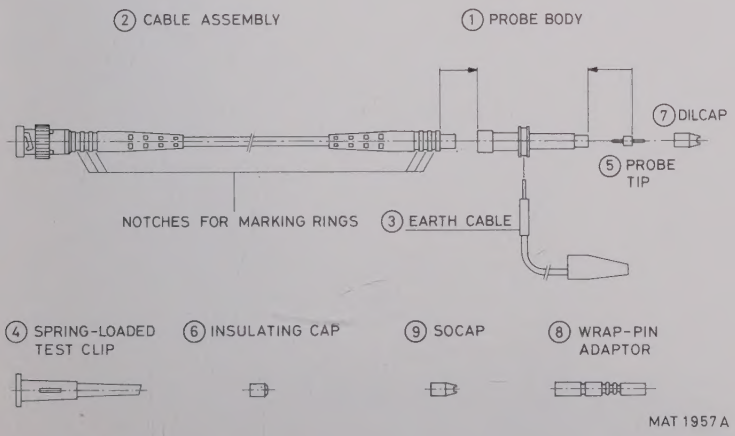

Fig. 1. Probe with accessories

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